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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/759,301

01/20/2004

Yi-Chen Tang

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7590

01/18/2005

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EXAMINER

HAN, JASON

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 01/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary	Application No. 10/759,301	Applicant(s) TANG, YI-CHEN	
	Examiner Jason M Han	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 1,3 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Figures 6 & 7 as mentioned in the specification are missing. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: connecting pins (51, 52, 53, 54, and 55). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

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applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because of the following minor informalities:

- a. Line 2 – please consider rewriting to read "brighter illumination than the known LED" to clarify and remain grammatically correct;
Correction is required. See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities:

- a. Page 1, Lines 16, 17; Page 2, Line 3: grammatical error – "electrode" should be written in the plural "electrodes";
- b. Page 1 Line 19: grammatical error – "LED's" is referring to a plurality and should be written as "LEDs"; this error is replete throughout the disclosure and subsequent identification should be corrected;
- c. Page 2, Line 10: grammatical error – please rewrite to read "visual effects";
- d. Page 2, Lines 17-18: grammatical error – the sentence is fragmented and convoluted – please consider revising to read "to provide a high brightness LED with power supply with low driving voltage";
- e. Page 3, Line 4: grammatical error – please rewrite to read "ICs";
- f. Page 3, Line 5: grammatical error – semicolon should be a comma;

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g. Page 4, Lines 15-16: grammatical error – please rewrite to read “power pins 6 and 6a go out externally from packaging”;

h. Numerous grammatical errors are replete throughout the application. The examiner has forgone any correction due to the amount, and the specification has not been checked to the extent necessary to determine the presence of all possible minor errors;

Appropriate correction is required.

Claim Objections

2. Claim 1 is objected to because of the following informalities: In line 5 of the claim, applicant cites one or more LED chips being disposed on the top center of the circuit board. The examiner suggests deleting in line 2 of the claim, “with an LED chip”, so as to avoid redundancy and confusion. Appropriate correction is required.

3. Claim 1 is further objected as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 1 recites the limitations “vibration circuitry”, “capacitor”, and “input power” in lines 6-8 of the claim. There is insufficient antecedent basis for these limitations in the claim. Applicant should clarify and positively claim the structural limitations of the invention and stay away from intended use. The following rejections have been based upon the best interpretation deemed by the examiner.

5. Claims 3-4 are objected to because of the following informalities: Independent Claim 1 recites structural limitations, while Claims 3-4 recite and use language that deal with manufacturing or process of making. Please use consistent language and

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positively cite structural limitations to be given full patentable weight with respect to the invention. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Turnbull et al. (U.S. Patent 5803579).
7. With regards to Claim 1, Turnbull teaches illumination components including:
 - a packaging [Figure 1: (19)] in lamp shape having a number of connecting pins [Figure 1: (17)] stretching out from the packaging;
 - a circuit board inside the packaging [Figure 1: (12); Column 10, Line 62 – Column 11, Line 3];
 - a number of LED chips [Figure 1: (16)], specifically one disposed on the top center of the circuit board; and
 - electronic circuitry [Figure 1: (22)] disposed on the back of the circuit board.

In addition, Turnbull teaches, "Q1 and Q2 form a constant-current source. Q1's base current is supplied by the microprocessor Port 0 through current limiting resistor R2. Q2 regulates Q1's base current to maintain a substantially constant current through R1 and hence the amber LEDs D1-D3. The regulation point is set by the cutin voltage of Q2's base-emitter junction. A detailed explanation follows [Column 30, Lines 33-39]."

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The examiner considers the above teaching clearly portraying a voltage regulating integrated circuit.

8. With regards to Claim 2, Turnbull teaches a flashing control IC/timing circuitry that drives the LEDs in rapid sequence [Column 32, Lines 44-62].

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Turnbull et al. (U.S. Patent 5803579) as applied to Claim 1 above, and further in view of Bischoff, Jr. (U.S. Patent 6158882).

Turnbull discloses the claimed invention as cited above, but does not specifically teach the LED chip being a die that is fixed on a circuit board and then bonded with wires.

Bischoff teaches a light emitting diode chip/die [Figure 2b: (42)] mounted onto a circuit board [Figure 2b: (29)], which is subsequently bonded with wires [Figure 2b: (44)].

It would have been obvious to modify the illumination package of Turnbull to incorporate the LED packaging of Bischoff to facilitate an easy manufacturing as well as a more compact device whereby the invention bypasses the electrodes that an LED chip/die is commonly mounted onto and directly onto the circuit board. The examiner makes further note that a chip and die are commonly known in the art to be synonymous. Turnbull corroborates, "A conventional discrete LED 14 generally consists of a pre-assembled or packaged "lamp" each of which normally includes a metal lead frame 17 or other substrate for electrical and mechanical connection and internal mechanical support, a semiconductor LED chip or "die" 16, a conductive

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adhesive or "die attach" (not shown) for electrically and mechanically attaching one electrode of the chip 16 to the lead frame 17 or other substrate, a fine wire conductor 20 for electrically connecting the other electrode of the chip 16 to the an area of the lead frame 17 or other substrate which is electrically isolated from the first electrode and die attach by the chip 16 itself [Column 11, Lines 5-18; underlines added for emphasis]."

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Turnbull et al. (U.S. Patent 5803579) as applied to Claim 1 above, and further in view of Kahl (U.S. Publication 2002/0145874).

Turnbull discloses the claimed invention as cited above, wherein the LED chip is a packaged LED unit [Figure 1], but does not specifically teach the LED chip being fixed onto the circuit board via SMD technology.

Kahl teaches a surface mounted lamp assembly with a light emitting diode mounted onto a substrate/circuit board [see Abstract]. In addition, Kahl teaches, "In modern printed circuit board (PCB) construction, surface mount technology has moved to the forefront in mass production of electronic devices, components and sub-assemblies. The use of surface mount devices (SMD) has greatly expanded in the automotive industry to reduce cost and to enhance reliability over the incandescent lamps traditionally used for such applications as instruments and radios. Such an SMD is shown and described in the above mentioned related patent [Page 1, Paragraph 5]."

It would have been obvious to modify the illumination package of Turnbull to incorporate the SMD technology of Kahl to reduce manufacturing costs.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references have been cited to further show the state of the art pertinent to the current application, but are not considered exhaustive:

US Patent 4383244 to Knuaff;	US Patent 4514789 to Jester;
US Patent 5143439 to Lewis et al;	US Patent 5150016 to Sawase et al;
US Patent 5278432 to Ignatius et al;	US Patent 5375044 to Guritz;
US Patent 5661374 to Cassidy et al;	US Patent 6086225 to Kahl et al;
US Patent 6107644 to Shakuda et al;	US Patent 6149283 to Conway et al;
US Patent 6180962 to Ishinaga;	US Patent 6183100 to Suckow et al;
US Patent 6211626 to Lys et al;	US Patent 6244728 to Cote et al;
US Patent 6296367 to Parsons et al;	US Patent 6318886 to Stopa et al;
US Patent 6380686 to Kim et al;	US Publication 2002/0176250 to Bohler et al;
US Publication 2002/0191396 to Reiff et al;	US Patent 6501103 to Jory et al;
US Patent 6577072 to Saito et al;	US Publication 2003/0107908 to Jang et al;
US Patent 6583447 to Wang et al;	US Patent 6636003 to Rahm et al;
US Patent 6659622 to Katogi et al;	US Patent 6747420 to Barth et al;
US Publication 2004/0125197 to Ogihara;	US Patent 6762563 to St-Germain et al;
US Patent 6786625 to Wesson;	US Patent 6160355 to Yee.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M Han whose telephone number is (571) 272-2207. The examiner can normally be reached on 8:00am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMH (1/5/2005)



JOHN ANTHONY WARD
PRIMARY EXAMINER